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On the solving of variational inequalities of stationary problems of two-phase flow in porous media

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Abstract

We consider a variational inequalities of the second kind with cocoercive operator and a non-differentiable proper convex functional. Such inequalities arise in the mathematical modeling of the problem of finding the boundaries of ultimately-stable pillars of residual viscous-plastic oil. To solve the variational inequalities we suggest the iterative process and its convergence investigated. The numerical results confirm the efficiency of the proposed method. © (2013) Trans Tech Publications, Switzerland.

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Keywords

Cocoercive operator, Iterative method, Mathematical simulation, Seepage theory, Ultimately-stable pillar, Variational inequality